



COPY OF PAPERS
ORIGINALLY FILED

SEQ ID NO:12

GTCATGAAAT TGGAATCTGA CAAGACGTTC CCAATCATGT TGAAGGGGAA
GATAAACGGC TACGCTTG TGTCGGAGG GAAGTTATTC AGGCCGATGC
ATGTGGAAGG CAAGATCGAC AACGACGTTC TGGCCGCGCT TAAGACGAAG
AAAGCATCCA AATACGATCT TGAGTATGCA GATGTGCCAC AGAACATGCG
GGCCGATACA TTCAAATACA CCCATGAGAA ACCCCAAGGC TATTACAGCT
GGCATCATGG AGCAGTCCAA TATGAAAATG GGCGTTTCAC GGTGCCGAAA
GGAGTTGGGG CCAAGGGAGA CAGCGGACGA CCCATTCTGG ATAACCAGGG
ACGGGTGGTC GCTATTGTGC TGGGAGGTGT GAATGAAGGA TCTAGGACAG
CCCTTTCAGT CGTCATGTGG AACGAGAAGG GAGTTACCGT GAAGTATACT
CCGGAGAACT GCGAGCAATG GTAATGA

SEQ ID NO:1

VMKLESDKTF PIMLEGKING YACVVGGKLF RPMHVEGKID NDVLAALKTK
KASKYDLEYA DVPQNMRA DT FKYTEKPOG YYSWHHGAVQ YENGRFTVPK
GVGAKGDSGR PILDNQGRVV AIVLGGVNEG SRTALSVVMW NEKGVTVKYT
PENCEQW

FIGURE 1

SEQ ID NO:31

Adaptein-1 nucleotide sequence:

GTCATGAAAT TGGAAATCTGA CAAGACGTTT CCAATCATGT TGGAAGGGAA
GATAAACGGC TACGCTTGTG TGGTCGGAGG GAAGTTATTC AGGCCGATGC
ATGTGGAAGG CAAGATCGAC AACGACGTTT TGGCCGCGCT TAAGACGAAG
AAAGCATCCA AATACGATCT TGAGTATGCA GATGTGCCAC AGAACATGCG
GGCCGATACA TTCAAATACA CCCATGAGAA ACCCCAAGGC TATTACAGCT
GGCATCATGG AGCAGTCCAA TATGAAAATG GCGTTTCAC GGTGCCGAAA
GGAGTTGGGG CCAAGGGAGA CAGCGGACGA CCCATTCTGG ATAACCAGGG
ACGGGTGGTC GCTATTGTGC TGGGAGGTGT GAATGAAGGA TCTAGGACAG
CCCTTTCAGT CGTCATGTGG AACAAGCTTT CTCCACATTA TGCTCAACTC
GAGGGAGTTA CCGTGAAGTA TACTCCGGAG AACTGCGAGC AATGGTAATG
AGC

SEQ ID NO:32

Adaptein-2 nucleotide sequence:

GTCATGAAAT TGGAAATCTGA CAAGACGTTT CCAATCATGT TGGAAGGGAA
GATAAACGGC TACGCTTGTG TGGTCGGAGG GAAGTTATTC AGGCCGATGC
ATGTGGAAGG CAAGATCGAC AACGACGTTT TGGCCGCGCT TAAGACGAAG
AAAGCATCCA AATACGATCT TGAGTATGCA GATGTGCCAC AGAACATGCG
GGCCGATACA TTCAAATACA CCCATGAGAA ACCCCAAGGC TATTACAGCT
GGCATCATGG AGCAGTCCAA TATGAAAATG GCGTTTCAC GGTGCCGAAA
GGAGTTGGGG CCAAGGGAGA CAGCGGACGA CCCATTCTGG ATAACCAGGG
ACGGGTGGTC GCTATTGTGC TGGGAGGTGT GAATGAAGGA TCTAGGACAG
CCCTTTCAGT CGTCATGTGG AACAAGCTTA GAAGCGGTAC TCAATGGCTC
GAGGGAGTTA CCGTGAAGTA TACTCCGGAG AACTGCGAGC AATGGTAATG
AGC

SEQ ID NO:33

Adaptein-1 protein sequence:

VMKLESDKTF PIMLEGKING YACVVGGKLF RPMHVEGKID NDVLAALKTK
KASKYDLEYA DVPQNMRA DT FKYTHEKPQG YYSWHHGA VQ YENGRFTVPK
GVGAKGDSGR PILDNQGRV V AIVLGGVNEG SRTALSVVMW NKLSPHYAQL
EGVTVKYTPE NCEQW

SEQ ID NO:34

Adaptein-2 protein sequence:

VMKLESDKTF PIMLEGKING YACVVGGKLF RPMHVEGKID NDVLAALKTK
KASKYDLEYA DVPQNMRA DT FKYTHEKPQG YYSWHHGA VQ YENGRFTVPK
GVGAKGDSGR PILDNQGRV V AIVLGGVNEG SRTALSVVMW NKLSRGTQWL
EGVTVKYTPE NCEQW

FIGURE 2A

Alignment of adaptein nucleotide sequences with CCD sequence:

SEQ ID NO:31	A-1	GTCATGAAAT	TGGAATCTGA	CAAGACGTTT	CCAATCATGT	TGGAAGGGAA
SEQ ID NO:32	A-2	GTCATGAAAT	TGGAATCTGA	CAAGACGTTT	CCAATCATGT	TGGAAGGGAA
SEQ ID NO:12	CCD	GTCATGAAAT	TGGAATCTGA	CAAGACGTTT	CCAATCATGT	TGGAAGGGAA
	A-1	GATAAACGGC	TACGCTTGTC	TGGTCGGAGG	GAAGTTATTC	AGGCCGATGC
	A-2	GATAAACGGC	TACGCTTGTC	TGGTCGGAGG	GAAGTTATTC	AGGCCGATGC
	CCD	GATAAACGGC	TACGCTTGTC	TGGTCGGAGG	GAAGTTATTC	AGGCCGATGC
	A-1	ATGTGGAAGG	CAAGATCGAC	AACGACGTTT	TGGCCGCGCT	TAAGACGAAG
	A-2	ATGTGGAAGG	CAAGATCGAC	AACGACGTTT	TGGCCGCGCT	TAAGACGAAG
	CCD	ATGTGGAAGG	CAAGATCGAC	AACGACGTTT	TGGCCGCGCT	TAAGACGAAG
	A-1	AAAGCATCCA	AATACGATCT	TGAGTATGCA	GATGTGCCAC	AGAACATGCG
	A-2	AAAGCATCCA	AATACGATCT	TGAGTATGCA	GATGTGCCAC	AGAACATGCG
	CCD	AAAGCATCCA	AATACGATCT	TGAGTATGCA	GATGTGCCAC	AGAACATGCG
	A-1	GGCCGATACA	TTCAAATACA	CCCATGAGAA	ACCCCAAGGC	TATTACAGCT
	A-2	GGCCGATACA	TTCAAATACA	CCCATGAGAA	ACCCCAAGGC	TATTACAGCT
	CCD	GGCCGATACA	TTCAAATACA	CCCATGAGAA	ACCCCAAGGC	TATTACAGCT
	A-1	GGCATCATGG	AGCAGTCCAA	TATGAAAATG	GGCGTTTCAC	GGTGCCGAAA
	A-2	GGCATCATGG	AGCAGTCCAA	TATGAAAATG	GGCGTTTCAC	GGTGCCGAAA
	CCD	GGCATCATGG	AGCAGTCCAA	TATGAAAATG	GGCGTTTCAC	GGTGCCGAAA
	A-1	GGAGTTGGGG	CCAAGGGAGA	CAGCGGACGA	CCCATTCTGG	ATAACCAGGG
	A-2	GGAGTTGGGG	CCAAGGGAGA	CAGCGGACGA	CCCATTCTGG	ATAACCAGGG
	CCD	GGAGTTGGGG	CCAAGGGAGA	CAGCGGACGA	CCCATTCTGG	ATAACCAGGG
	A-1	ACGGGTGGTC	GCTATTGTGC	TGGGAGGTGT	GAATGAAGGA	TCTAGGACAG
	A-2	ACGGGTGGTC	GCTATTGTGC	TGGGAGGTGT	GAATGAAGGA	TCTAGGACAG
	CCD	ACGGGTGGTC	GCTATTGTGC	TGGGAGGTGT	GAATGAAGGA	TCTAGGACAG
				(HindIII)		(XhoI)
	A-1	CCCTTTCAGT	CGTCATGTGG	AAC---AAGCTT	TCTCCACATTA	TGCTCAA CTCGAG
	A-2	CCCTTTCAGT	CGTCATGTGG	AAC---AAGCTT	AGAAGCGGTAC	TCAATGG CTCGAG
	CCD	CCCTTTCAGT	CGTCATGTGG	AACGAG-----	-----	-----
	A-1	---GGAGTTA	CCGTGAAGTA	TACTCCGGAG	AACTGCGAGC	AATGGTAATGAGC
	A-2	---GGAGTTA	CCGTGAAGTA	TACTCCGGAG	AACTGCGAGC	AATGGTAATGAGC
	CCD	AAGGGAGTTA	CCGTGAAGTA	TACTCCGGAG	AACTGCGAGC	AATGGTAATGAGC

FIGURE 2B

Alignment of adaptein protein sequences with CCD sequence:

SEQ ID NO:33	A-1	VMKLESDKTF	PIMLEGKING	YACVVGGKLF	RPMHVEGKID	NDVLAALKTK
SEQ ID NO:34	A-2	VMKLESDKTF	PIMLEGKING	YACVVGGKLF	RPMHVEGKID	NDVLAALKTK
SEQ ID NO:1	CCD	VMKLESDKTF	PIMLEGKING	YACVVGGKLF	RPMHVEGKID	NDVLAALKTK
	A-1	KASKYDLEYA	DVPQNMRA DT	FKYTHEKPQ G	YYSWHHGAV Q	YENGRFTVP K
	A-2	KASKYDLEYA	DVPQNMRA DT	FKYTHEKPQ G	YYSWHHGAV Q	YENGRFTVP K
	CCD	KASKYDLEYA	DVPQNMRA DT	FKYTHEKPQ G	YYSWHHGAV Q	YENGRFTVP K
	A-1	GVGAKGDSGR	PILDNQGRV V	AIVLGGVNE G	SRTALSVVM W	N-KLSPHYA QLE
	A-2	GVGAKGDSGR	PILDNQGRV V	AIVLGGVNE G	SRTALSVVM W	N-KLRSGTQW LE
	CCD	GVGAKGDSGR	PILDNQGRV V	AIVLGGVNE G	SRTALSVVM W	NE
	A-1	-GVTVKYTPE	NCEQW			
	A-2	-GVTVKYTPE	NCEQW			
	CCD	KGVTVKYTPE	NCEQW			

FIGURE 2C

SEQ ID NO:6

5' ATGTACGGTCGTAAAAAACGTCGTCAGCGTCGTCGTGTCATGAAATTGGAATCTGACAAGACG
TTCCCAATCATGTTGGAAGGGAAGATAAACGGCTACGCTTGTGTGGTCGGAGGGAAGTTATTCAG
GCCGATGCATGTGGAAGGCAAGATCGACAACGACGTTCTGGCCGCGCTTAAGACGAAGAAAGCAT
CCAAATACGATCTTGAGTATGCAGATGTGCCACAGAACATGCGGGCCGATACATTCAAATACACC
CATGAGAAACCCCAAGGCTATTACAGCTGGCATCATGGAGCAGTCCAATATGAAAATGGGCGTTT
CACGGTGCCGAAAGGAGTTGGGGCCAAGGGAGACAGCGGACGACCCATTCTGGATAACCAGGGAC
GGGTGGTCGCTATTGTGCTGGGAGGTGTGAATGAAGGATCTAGGACAGCCCTTTCAGTCGTCATG
TGAACAAGCTTGGATCTTCTCTCGAGGGAGTTACCGTGAAGTATACTCCGGAGAACTGCGAGCA
ATGGTAA3'

SEQ ID NO:7

MYGRKKRRQRRRVMKLESDKTFPIMLEGKINGYACVVGGKLFRPMHVEGKIDNDVLAALKTKKAS
KYDLEYADV PQNMRADTFKYTHEKPQGYYSWHHGA VQYENGRFTV PKGVGAKGDSGRPI LDNQGR
VVAIVLGGVNEGSRTALSVVMWNEKGVTVKYTPENCEQW

FIGURE 3